STRUCTURE 135

This structure consists of a pumping plant and a navigation lock. The pumping plant has a spillway consisting of two gated corrugated metal pipe culverts which control flows which bypass the pumps. Structure 135 is located on the northeast shore of Lake Okeechobee in the alinement of Levee 47 at Chancy Bay. It is lakeward of U.S. Highway 441 and about 15 miles southeast of the town of Okeechobee. The station consists of both a pumping and outlet unit. The pumping unit is a reinforced concrete structure with a concrete block superstructure. The outlet unit is a U-shaped structure of reinforced concrete sides and bottom. The pumping station is equipped with four 125 cfs pumps which discharge via the outlet structure into the lake. A navigation lock is located just south of the station. The lock was provided by local interests with funds other than project funds.

PURPOSE

Lake Okeechobee Northeast Shore Levees, together with higher lake stages, restrict natural drainage to the lake. This structure removes the otherwise impounded water at a rate of as much as 3/4 inch of runoff per day from the tributary drainage area.

OPERATION

The spillway will be used to allow gravity discharge during periods when Lake Okeechobee stage is below elevation 13.5. This pipe spillway can also be used during drought conditions to provide water for the tributary area when the lake stage is above the intake canal water level. Normally, pumping will be initiated when the headwater elevation reaches 14.0 and terminated when it falls to 13.25. In response to heavy rainfall, all pumping units may be placed in operation and the stage lowered to and maintained at 13.0 until the storm has passed. The spillway gate shall be closed at all times when the lake level is above intake canal water level except when backflow for irrigation purposes is desirable during a drought period.

For the normal range of pumping heads, the engine should be run at a constant governed speed of 1200 r.p.m

After the pump is stopped, the vacuum breaker valve is opened to permit the water column in the pump to drop to pool level and the water in the discharge pipe to drop to the lower of the lake or invert elevation.

Whenever the lake stage is below 13.5 feet, the lock remains full open. When the lake exceeds this stage, the lock is operable seven days a week between 5:30 AM and 8:00 PM, and the

lock is full closed between 8:00 PM and 5:30 AM in the winter. The lock is operable seven days a week between 5:30 AM and 9:00 PM. in the summer.

FLOOD DISCHARGE CHARACTERISTICS

	Design
Discharge Rate	500 cfs
Headwater Elevation	13.0 feet
Tailwater Elevation	23.5 feet
Type Discharge	pumped

DESCRIPTION OF STRUCTURE

Type Four pumping units and a double barrel, gated CMP culvert spillway in a reinforced concrete and concrete block structure and a reinforced concrete navigation lock

Spillway

Number of barrels two

Size of barrels 96 inch diameter

Length of barrels 161 feet "

Flow line elevation 5.0 feet

Service bridge elevation 24.0 feet

Water level which will by-pass structure 37.5 feet

Gates

Number 4

Type upstream, slide gates; downstream, flap gates

Size 96 inch diameter

Control manual

Lifting Mechanism pedestal mounted, manually operated hand wheel on head gate stem, hand wheel operated winch, which operates cable and drums.

Dewatering Facilities

Storage S-127

Type stop logs

Size upstream & downstream 8" x 8" x 10'-10" long

Pumping Station

Number of Pumps 4

Size & Type of Pumps 48" vertical, axial flow

Design rating 125 cfs each

Impeller speed 390 r.p.m.

Pump Manufacturer Johnson Pump Co.

Engine Make & Type Caterpillar, D-353, 6 cylinder, in-line diesel

Engine Horsepower 268 each

Engine Speed 1200 r.p.m.

Gates (per bay)

Number one

Type flap, downstream

Size 48 inch diameter

Control none

Lifting Mechanism none

Dewatering Facilities

Storage West Palm Beach Field Station

Type stop logs

Size

Upstream 6 @ 8" x 8" x 10'-10" long

Downstream 6 @ 6" x 6" x 7'-1" long

Lock

Type reinforced concrete, U-shaped chamber

Operating Deck Elevations 54.0 ft. lakeside; 45.0 ft. landside

Dimensions (usable chamber)

Length 50 feet

Width 15 feet

Invert Elevation 8.0 feet

Gates

Type vertical lift

Size

Landside gate 14.0 feet high by 15.75 feet wide

Lakeside gate 19.9 feet high by 15.8 feet wide

Lift Mechanism direct drive electric motor gear connected to cable drum

Dewatering Facilities

Location West Palm Beach Field Station

Type stop logs

Size and Number 24 each, 10" x 10" x 16'-2"

POWER SOURCE

Normal commercial electricity

Emergency diesel engine driven electric generator

Date of Transfer March 6, 1970

ACCESS from U.S. Highway 441 via about 1/4 mile of access road

HYDRAULIC AND HYDROLOGIC MEASUREMENTS

Water Level Remote digital headwater and tailwater recorder

Gate Position Recorder Remote digital recorder

Engine Tachometer Remote digital recorder